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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,662	02/24/2004	Patrick J. Caine		2696

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EXAMINER	
LAU, HOI CHING	

ART UNIT	PAPER NUMBER
2636	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/785,662	CAINE, PATRICK J.	
	Examiner	Art Unit	
	Hoi C. Lau	2636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *7 and 8* is/are allowed.

6)☒ Claim(s) *1,2,4-6 and 9-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 4-6 and 9-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leftridge, Sr (U.S. 6,570,494) in view of Grissom et al. (U.S. 6,166,996), in further view of Mafra-Neto et al. (U.S. 6,766,251).

Regarding **Claim 1**, Leftridge's device teaches a power source connected to at least one speaker for producing sound, a mosquito dispersing device comprising for generating a mosquito dispersing pitch pattern having a frequency in the range of a wing beat frequency of a dragonfly from which a signal having a frequency of the mosquito dispersing pitch pattern can be produced for use at least on speaker to produce vibrations of the mosquito dispersing pitch pattern in a dispersing area whereby, mosquito in the dispersing area can be diminished by at least one of fleeing upon sensing the vibrations of the mosquito dispersing pitch pattern and succumbing to

an increased presence of dragonflies attracted to the dispersing area by the vibrations of the mosquito dispersing pitch pattern (column 1, lines 51-67 and column 3, lines 19-40).

It fails to shows an amplifier circuit connected to the speaker and the frequency range of about 15 to 50 hertz.

Grissom' device teaches an amplifier circuit connected between the transducer unit and control unit (figure 1 and column 4, lines 19-57).

It would have been obvious to one of ordinary skill in the art to implement an amplifier circuit with the speaker because it would increase the performance of the speaker for an extended range.

Mafra-Neto teaches the wing beat frequency of dragonflies in the range of 20-28 hertz (column 5, lines 46-48).

It would have been obvious to one of ordinary skill in the art to combine the frequency range taught by Mafra-Neto with the device of Leftridge because this particular frequency range would increase the attraction of dragonfly, the mosquito's most significant predator, in order to disperse the mosquito.

As to **claim 2, 4-5**, the combination meets the limitation of claim where the frequency range of 20-28 hertz which is below the ultrasonic range.

It would have been obvious to one of ordinary skill in the art the frequency range of the combination is about 33.5 hertz or implement at a fixed range of 33.5 hertz since the range could be various within a given type of species.

As to **claim 6**, the combination meets all the limitation of claims and Grissom's device teaches a CPU generates pattern in a digital format from a digital storage medium (16 and 18) and convert from digital to analog (column 4, lines 45-57 and column 5, lines 16-53)

It fails to clearly state the device includes an integral converter.

It would have been obvious to one of ordinary skill in the art the combination of the CPU (14), frequency generator (20), Preamp and amplifier of Grissom's device able to perform the digital to analog conversion.

As to **claim 9**, the combination meets the limitation of claim where Grissom's device teaches the digital storage medium is EPROM and RAM (figure 1).

It would have been obvious to one of ordinary skill in the art EPROM is a well-known type of Flash ROM and would be obvious to implement a store medium within the device because it would provide a store means for the information and instructions.

As to **claim 10**, Grissom's device inherent include a converter (14 and 22) and wherein the mosquito dispersing pitch pattern is generated in a digital format from a digital storage medium (16 and 18) and the signal having a frequency of the mosquito dispersing pitch pattern is produced by the extraneous converter connected to the amplifier circuit for converting the mosquito dispersing pitch pattern from digital to analog (figure 1 and column 4, lines 19-57).

As to **claim 11**, the combination meets all the limitation of claims where Grissom's device teaches a pulse circuit (20) developing a pitch pattern signal of a

selecting frequency (column 4, lines 42-57) and Mafra-Neto shows the frequency range in 20 to 40 hertz (column 5, lines 46-48).

It is rejected for the similar reasons set forth in the rejection of claim 1.

As to **claim 12-13**, the combination meets all the limitation of claims and Lenhardt's device teaches the pulse circuit comprises a timer circuit (figure 6) with the same structure as the monostable timer circuit wherein the timer circuit compares an integrated timer circuit connected to an RC circuit resistance and capacitance of the RC circuit is selected to provide the select frequency (figure 6 and column 9, lines 22-37).

As to **claim 14**, Grissom's device teaches the speakers (26) suitably sized to be powered by amplifying to cause the vibrations of the mosquito dispersing pitch pattern to radiate throughout the dispersing area (figure 1 and column 6, lines 17-41).

Regarding **claim 15**, Leftridge's device comprises:

A generator for generating a mosquito dispersing pitch pattern having a frequency in the range of at least one of a wing beat frequency of a dragonfly and a wing beat frequency of a damselfly (column 1, lines 51-67 and column 3, lines 19-40);

A generator for generating a signal having a frequency of the mosquito dispersing pitch pattern (column 1, lines 51-67 and column 3, lines 19-40);

whereby, mosquitoes in the dispersing area can be diminished by at least one of fleeing upon sensing the vibrations of the mosquito dispersing pitch pattern and succumbing to an increased presence of at least one of dragonflies and damselflies

attracted to the dispersing area by the vibrations of the mosquito dispersing pitch pattern (column 1, lines 51-67 and column 3, lines 19-40).

It fails to show to clearly state an amplifier connected within system to amplifying the signal to power at least one speaker to produce vibrations of the mosquito dispersing pitch pattern in a dispersing area and the wing beat frequency of about 15-50 hertz.

Grissom' device teaches an amplifier circuit connected between the transducer unit and control unit (figure 1 and column 4, lines 19-57).

Mafra-Neto teaches the wing beat frequency of dragonflies in the range of 20-28 hertz (column 5, lines 46-48).

It is rejected for the similar reasons set forth in the rejection of claim 1.

As to **claim 16**, the combination meets all the limitation of claims where Mafra-Neto teaches the wing beat frequency of dragonflies in the range of 20-28 hertz (column 5, lines 46-48).

Regarding **claim 17**, Leftridge's device comprises:

A generator for generating a mosquito dispersing pitch pattern having a frequency in the range of at least one of a wing beat frequency of a dragonfly and a wing beat frequency of a damselfly (column 1, lines 51-67 and column 3, lines 19-40);

A device for transmit the pitch pattern signal to power at least one speaker to replicate the vibrations of the wing beat frequency of a dragonfly in an area to effectively disperse mosquitoes from the area.

It fails to show to clearly state an amplifier connected within system and the wing beat frequency of about 15-50 hertz.

Grissom' device teaches an amplifier circuit connected between the transducer unit and control unit (figure 1 and column 4, lines 19-57).

Mafra-Neto teaches the wing beat frequency of dragonflies in the range of 20-28 hertz (column 5, lines 46-48).

It is rejected for the similar reasons set forth in the rejection of claim 1.

As to **claims 18**, the combination meets all the limitation of claims and Grissom's device teaches a store storing the pitch pattern and for accessing the pitch pattern signal stored for storing (figure 1 and column 4, lines 19-57).

As to **claims 19**, the combination meets all the limitation of claims and Grissom's device teaches the pitch pattern signal is in digital format and the means for storing is a digital storage medium; and further comprising a converter for converting the pitch pattern signal from digital to analog (column 4, lines 45-57 and column 5, lines 16-53).

Regarding **claims 20**, Leftridge's device comprising:

A housing 30 (figure 1 and column 1, lines 51-55);

A speaker in housing wherein the speaker develops an acoustic wave of a frequency corresponding to wing beat of a mosquito predator. (figure 1 and column 1, lines 51-67);

It fails to show an amplifier and a pulse circuit in housing developing a pulse signal of a select frequency in the range of 20 to 40 hertz.

Grissom's device teaches a pulse circuit (20) developing a pitch pattern signal of a selecting frequency (column 4, lines 42-57).

It would have been obvious to one of ordinary skill in the art to implement a pulse circuit and amplifier because a pulse circuit would provide a distinct frequency pattern while an amplifier would increase the frequency range and power for the device.

Lenhardt's device teaches the frequency pattern with low frequency (5-50 Hz) tones or noise that are generally pulsed at less than 100Hz (column 7, lines 4-8 and column 8, lines 12-41).

Mafra-Neto teaches the wing beat frequency of dragonflies in the range of 20-28 hertz (column 5, lines 46-48).

It is rejected for the similar reasons set forth in the rejection of claim 1.

As to **claims 21 and 22**, it is rejected for the similar reasons set forth in the rejection of claims 12 and 13.

Regarding **claim 23**, Leftridge's device comprises:

A generator for generating a mosquito dispersing pitch pattern having a frequency in the range of at least one of a wing beat frequency of a dragonfly and a wing beat frequency of a damselfly (column 1, lines 51-67 and column 3, lines 19-40);

The speakers to produce vibrations of the mosquito dispersing pitch pattern in a dispersing area (column 1, lines 51-67);

A circuit board which having speakers (figure 5, and column 1, lines 51-67)

It fails to show to clearly state an amplifier connected within system to amplifying the signal and the wing beat frequency of about 15-50 hertz.

Grissom's device teaches an amplifier circuit connected between the transducer unit and control unit (figure 1 and column 4, lines 19-57).

Mafra-Neto teaches the wing beat frequency of dragonflies in the range of 20-28 hertz (column 5, lines 46-48).

It is rejected for the similar reasons set forth in the rejection of claim 1.

3. Claims 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grissom et al. (U.S. 6,166,996) in view of Leftridge, Sr (U.S. 6,570,494), in further view of Mafra-Neto et al. (U.S. 6,766,251).

Regarding **claims 24**, Grissom's device comprises:

A speaker (26) (figure 1 and column 4, lines 21-57);

A generator 20 for generating a pitch pattern signal comprising a store (16 and 18) for storing the pitch pattern signal and means for accessing the pitch pattern signal stored for storing wherein pitch pattern signal being in digital format of a select frequency and the store for storing being a digital storage medium (16 and 18) (figure 1 and column 4, lines 21-57),

A converter (CPU 14 and cycle select 22) in the housing for converting the pitch pattern signal from digital to analog (figure 1 and column 4, lines 21-57);

An amplifier connecting the means for generating a pitch pattern signal to the speaker, wherein the speaker develops an acoustic wave of a frequency (figure 1 and column 4, lines 21-57).

It fails to clearly to state the device is installed into housing and the selected frequency range is about 20 to 40 hertz, which is corresponding to wing beat of a mosquito predator.

Leftridge's device teaches the device is integrated inside a housing (figure 1 and column 1, lines 51-67).

It would have been obvious to one of ordinary skill in the art the device would integrate inside a housing because it would provide a protection for device to prevent outside environment impact.

Mafra-Neto teaches the wing beat frequency of dragonflies in the range of 20-28 hertz (column 5, lines 46-48).

It is rejected for the similar reasons set forth in the rejection of claim 1.

As to **claim 25**, Grissom's device teaches digital storage medium which is a Flash ROM (16).

It is rejected for the similar reasons set forth in the rejection of claim 9.

Regarding **claim 26**, Grissom's device comprises:

A generator for generating a signal having a frequency of a pitch pattern comprising a first print circuit board, which first printed circuit board having a digital storage medium for storing the pitch pattern and a pre-amplifier for accessing the pitch

pattern stored on the digital storage medium and producing an analog signal having the frequency of a pitch pattern (column 4, lines 19-57);

An amplifier for amplifying the signal t power at least one speaker in the same circuit board which comprising an amplifier circuit for amplifying the analog signal having a frequency of a pitch pattern to produce vibrations of the pitch pattern in a dispersing area (column 4, lines 19-57).

It fails clearly state the frequency in the range of at least one of a wing beat frequency of a dragonfly and a wing beat frequency of a damselfly and a second printed circuit board.

Leftridge's device teaches the frequency in the range of a wing beat frequency (column 1, lines 51-67) and Mafra-Neto teaches the wing beat frequency of dragonflies in the range of 20-28 hertz (column 5, lines 46-48).

It would have been obvious to one of ordinary skill in the art to set the frequency range about a wing beat frequency of dragonfly because the majority insects' wings have the same structure which could associate the same repelling technique.

It would have been obvious to one of ordinary skill in the art to modify a single circuit board into two separate circuit board because it would provide a replaceable access for the device without replace the entire unit when the device is not function properly.

As to **claim 27**, the combination meets all the limitation of claims and Mafra-Neto teaches the wing beat frequency of dragonflies in the range of 20-28 hertz (column 5, lines 46-48).

It is rejected for the similar reasons set forth in the rejection of claim 1.

As to **claim 28**, Lenhardt' s device teaches an integrated sensor 56 responsive to a remote control (figure 7 and column 9, lines 6-42).

As to **claims 29 and 30**, Leftridge's device teaches a battery as a power supply (column 1, lines 51-67).

Allowable Subject Matter

4. Claims 7 and 8 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

NOTES: Claims 7 and 8 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose the digital storage medium has a plurality of distinct fixed frequency mosquito dispersing pitch patterns stored thereon in the range of about 20 to 40 hertz where user able to select a distinct pitch pattern for the plurality of distinct fixed frequency pitch pattern.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoi C. Lau whose telephone number is (571)272-8547. The examiner can normally be reached on M- F 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on (571)272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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